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Journal of the Society of Arts.

FRIDAY, JANUARY 2, 1863.

NOTICE TO MEMBERS AND INSTITUTIONS.

EXHIBITION CATALOGUES.

Her Majesty's Commissioners for the International Exhibition of 1862 have placed at the disposal of the Council, for distribution to the Members of the Society and Members of the Institutions in Union, copies of the Industrial and Fine Art Catalogues.

Members of the Society desiring to have copies of each of these Catalogues may have them on application, either personally or by an authorised agent, at the Society's House.

Secretaries of Institutions in Union may have a number of copies placed at their disposal for distribution amongst their Members, on making a similar application, specifying in all cases the number required.

GENERAL INDEX.

A general Index to the first ten volumes of the *Journal* is in the course of preparation, which may be bound with the last volume. Members who desire to have copies (which will be supplied *gratis*) are requested to apply to the Secretary as early as possible, in order that a sufficient number may be printed. As soon as it is printed it will be sent to each member who has made application for it.

NOTICE TO MEMBERS.

A few copies of "Essays on the Dwellings of the Poor and other Subjects," by Mr. Rufus Usher, have been placed at the disposal of the Council for distribution among the members. Any member desiring to have a copy should apply to the Secretary.

AWARDS OF MERIT AT INTERNATIONAL EXHIBITIONS.

(Continued from page 107.)

In August last the Council of the Society of Arts issued a letter, inviting the opinion of the Jurors, the Commissioners for the Colonies and for Foreign countries, and the principal Exhibitors at the International Exhibition, on the question of Awards of Merit in connection with International Exhibitions; and requesting replies to the questions given below, with the intention of embodying the answers in a public report.

AWARDS OF JURIES.

1.—Are you of opinion that Awards for Merit, by

medals or otherwise, in International Exhibitions, are desirable?

2.—State the reasons for your opinion.

3.—Ought Works of Fine Art and Designs to be excluded from the awards?

4.—Can you suggest any better method than the appointment of jurors for making the awards?

5.—Can you suggest any improvement in the constitution or proceedings of the juries?

6.—Is any appeal from the decision of the juries desirable?

7.—If you think awards undesirable, can you suggest any other means by which meritorious productions may be brought to the notice of the public?

8.—Have you any further suggestions to offer on the subject?

The following is a summary of the replies received. The figure attached to the replies correspond with those of the questions:—

GORDON W. CLARK, Juror, Class IIIc., confines his observations to his experience in this class only.—1. Certainly not; the difficulties of making awards too great. 2. Because such awards give a very false impression to the public, who naturally look upon a prize article as the best of its kind, whereas it is often of a very inferior description, but has obtained a medal as being the best that can be exhibited, considering the circumstances under which it is produced. A striking example may be found as an illustration in the wines from the north of Spain. As a rule, these are of a most inferior order, and wholly unsuited to the ordinary requirements of trade, and are useable only in the country of growth; but several obtained medals because great care and skill had evidently been employed in making the best possible produce with the materials at hand. But this the public cannot judge of, not knowing all the circumstances, and they are misled by such produce being rewarded. 4. If awards are to be made, I know of no other way than by appointing juries; but more care should be exhibited in their selection, especially of the foreign jurors. 5. Independent of the juries who are to make the awards, there ought to be a body of gentlemen well conversant with the articles of each class, whose duty it should be to arrange the products in each section in some systematic form, and according to a recognised plan, and to see they are presented *seriatim* to the jury in this form, and thus avoid the constant confusion that arises from each country putting forward its products in any way the Commissioners may think proper. In the Exhibition of this year, the want of any arrangement by some of the Commissioners has been very troublesome and confusing, and increased considerably the labour of the juries. 6. Does not consider any appeal desirable. If the jurors are properly chosen, they ought to be the best judges. Everybody who was not rewarded would appeal on the chance of a decision in his favour. 7. No other means are needed. Experience shows that those engaged in every department of trade thoroughly understand the articles used in that branch, and competition is now so keen that any really meritorious production is sure to be well taken up by some one if he sees the merit and his own advantage. The best test of merit is the approval of the public, and by giving awards you mislead rather than guide their judgment. 8. Does not think wines and spirits are at all fit produce for such awards, but if any awards are to be made, would establish one medal for the best specimen of each description of goods exhibited in each class, according to certain regulations as to growth, age, &c., and in case of equality two might be awarded, and I would then allow jurors to call attention, by honourable mention, to any things they deemed worthy of such notice, but medals should really represent excellence, and not merit only.

THOMAS CLEGG, Manchester.—1. Yes. 2. Because they bring an exhibitor into notice, and stimulate him to

new efforts. 3. Doubtful. 4. No better plan than properly selected juries. 5. Exhibitors should choose jurors; every exhibitor having power to challenge, and Commissioners to have power to exclude and put another in his place. No award unless three-fourths of jury concur. 6. No appeal; but, if desired, then parties aggrieved might select one Englishman and one foreigner, and the jury one Englishman and one foreigner, the exhibitor one of each, and the Commissioners one of each. Practically no appeal necessary. Complaints are forgotten after a short time.

DANIEL J. COLLINS, Exhibitor, Class XVII.—1. Yes. 2. Bring meritorious productions forward, and guide public opinion. 3. Should not be excluded. 4. Juries the best. 5. Commissioners should appoint juries and furnish lists to exhibitors, and consider any reasonable objections to list; one *bond fide* manufacturer and one working man at least should be appointed. Due notice of examination by the jury should be given to each exhibitor. 6. Appeals not generally desirable, but should be allowed in certain exceptional cases. 8. Distinction should be made between mere exhibitors and the manufacturer and artist designer.

ROBERT H. COLLYER, M.D., F.C.S., Exhibitor, Classes IVc. and XXVIIIb.—1. Some mark of distinction desirable. 2. Stimulate exertion to increased excellence. 3. Works of Art should not be excluded. 4. The defect in the present constitution of juries consists principally in the fact that some of the jurors are incompetent to decide on the merits of the subject submitted to their decision. 5. The conclusions arrived at in a great many instances have been erroneous, principally arising from the exhibitor not having been able to communicate to the jury the particular features of novelty and improvement relative to his invention or mode of manufacture. Therefore advises that, whenever practicable, the inventor or exhibitor should have access to the jury, in order that every source of information should be made available. No jurymen should adjudicate except he had been selected by his own craft, as competent to fill so important a position. 6. No appeal if jury properly constituted. 8. The number of awards on the present occasion has been so great as to be of little or no value to the possessor; one gold medal for best production to each distinct speciality would be ample; two silver medals for the next best, and honourable mention for those deserving of it; the special reason for which the medal is given should be stated in detail; the medal itself should have the names of the jurymen engraved on it, with that of the exhibitor.

Messrs. COPLAND and Co., Exhibitors, Class IIIb.—1. Yes. 2. Give an impetus to manufacturer to improve. 3. See no reason why works of Fine Art should be excluded. 4. Properly appointed jury the best mode. 5. Judging by the awards at the present Exhibition, consider the jurors displayed great incompetency; juries should examine the manufacturers *viva voce*, and the articles manufactured should be guaranteed of same quality as those exhibited. 6. Awards should be final except in special cases. 8. If no competent juries can be obtained no awards should be made. Award of medals as at last Exhibition does great injury. In Class IIIb. great injustice has been done.

JOHN CORYTON, Exhibitor, Class XII., prefaces his answers by stating that he is one of a class of individuals who, having arrived at the conclusion that a long established system of manufactures is conducted on erroneous principles, desire to accomplish a reform in it, and to promote public discussion for that purpose by the exhibition of improved models, but are not in a condition to carry out the requisite experiments, and consider that a *quasi* judicial investigation requiring a high order of intelligence and scientific acquirements is necessary. 1. Thinks medals objectionable. 2. The practical working of the present system is that the exhibitor places his medal in his window, and a print of it on

his circulars, and thereby secures from the public an advantage over his brethren in trade which is for the most part wholly undeserved. Instances exhibitors of jewellery, papeterie, fishing-tackle, and the like, in which scarcely any meritorious connection exists between the objects exhibited and the exhibitors. To persons situated like himself, a medal is absolutely valueless, inasmuch as the award would not weigh for a moment with the authorities at the Admiralty in inducing them to institute experiments or inquiries into the proposed plan. 4. Complaints that though in attendance to explain his models to the jury, it was painfully apparent that the gentleman to whom he was told to address his observations did not understand the drift of them. 5. A list of 20 or more men eminent for their special knowledge should be submitted to the exhibitors for jury, and a certain number, say six, voted for by them. 6. An appeal undesirable. The value of the present awards has been much impaired by the indecision of the Committee. 7. The jury should make a special report in the case of each exhibitor, more especially where new principles are concerned in manufactures, and a certified official copy of such report should be given to each exhibitor. 8. The office of juror should be well paid, and the remuneration should be dependent on their attendance. The jurors might in such case discharge the duties now performed by the superintendents of classes. Major Moffatt, Superintendent of the Department of Naval Architecture, is an officer of engineers, and, either from ignorance of the subject, or from inattention, placed the whole of this exhibitor's models under the head of "boats," a totally erroneous classification, and one which induced Admiral Washington to inform the writer that "general principles" could not be gone into.

THOMAS OGDEN DIXON (Firm of John Dixon and Sons), Steeton, near Leeds, Exhibitors, Class VII.—1. Not as awarded on the present occasion. 2. Because capable men were not known to those having choice of jurors. 3. Would include Fine Arts. 4. Jurors should be appointed out of the special trades. Members of the Society of Arts, of the particular trade under consideration, should be asked to name jurors, from whom the Commissioners should select one to act for the special trade. 5. There are some classes in which the jurors have no knowledge of the subject, and hence great mistakes. One award only should be made in each trade. If advice needed, the juror should ask the assistance of his colleagues. 6. None, when practical men are appointed. 7. Would suggest that awards should be cut down to as small a number as possible, and after the articles had been classified, those to which awards are allotted should be ascertained exactly. These should, after the decision of the jurors, be illustrated in a volume, with as short a description in letter-press as practicable, to specify the particular qualifications which merited the award. Each successful competitor should then be presented with a copy, to serve in place of a medal. 8. Would call the attention of the Society to agricultural meetings, and wish them to observe how the members of such meetings appoint their judges, and what satisfaction they seem to give. The International Exhibition, though on a more extended scale, would be benefited. Believes in observing and carrying out the principle of these shows in the choice of men most capable of exercising a practical judgment. Would suggest that foreign jurors in future be excluded from the list of jurors. Would let an Exhibition in England be judged, so far as awards are concerned, by Englishmen alone; and, if the Society thought fit, they might organise their members in different districts to point out men capable of filling posts as jurors; these men, having a particular responsibility, would act with caution, and render justice more certain than it has been on the present occasion.

A. DOMETER, Commissioner for Hanover.—1. By no means, as far as regards the Exhibition of 1862, to which the remarks on the following points refer in

particular. 2. There being only one class of medals, and a very large number in proportion to the number of the exhibitors, many second-rate or third-rate productions were honoured with the same distinction as the first-rate ones, and this deceives the public, because they must think that all such goods as got medals are of equal merit, particularly as generally, not even in the reasons stated for the award, was a difference made between the different productions. At the same time this causes an injustice to the manufacturer, who has taken a great deal of trouble to arrive at producing better or cheaper goods than his neighbour, and his reputation loses among a great many of the buyers of his goods, since they think that all those who get the same distinction produce goods of equal merit. Further, it is of no value whatever to him as regards those who are well informed on the subject, because they know that in a great many instances the juries did not appear to be aware that the goods to which they awarded medals were not exhibited at all. 4. No. 5. Every person accepting the appointment of a juror ought to bind himself to be present at the examination of the objects, and also at the discussions in committee. The president ought to adopt an efficient system for seeing that all the articles in his class are examined. He also ought to enter in a book against each article the opinion of each juror, which would prevent mistakes to a great extent. Before the printing of the reports, there ought to be a general revision to see that all articles have really been examined. Each exhibitor ought (foreign ones through their commissioners) to send to the president of the class in which his goods have been exhibited two copies of a short statement of what he thinks desirable to communicate for the information of the jury, and also the price for which his article can be sold in quantities, one copy of which ought to be returned to him, with a note at the foot stating that his goods have been examined. As soon as this has been done, such statements ought to be copied on paper, of a certain size, with a margin on the side, so that they can be sewn together in the form of a book. There ought to be established a proper medium for the exchange of goods improperly classified into other classes. There ought to be given only one medal, or a few medals in each class, and honorable mentions as many as necessary, and not more; but in all cases the decisions of the jury ought to be supported by a more exact statement than has been generally adopted this year, where, in a great many classes for all medals, "excellence of quality," &c., &c., has been adopted. If many medals should be deemed desirable, then they ought to be of two classes, the first only of a very limited number. 6. An appeal against the decision of a jury ought to be allowed only in cases where it can be proved that the goods have not been examined by the jury, but in no other case. 8. Before another exhibition a law ought to be passed by which it is made a misdemeanour to exhibit in shops, or print in advertisements, on invoices, &c., "prize medals" of exhibitions which have not been obtained.

FREDERICK EDWARDS AND SON, Exhibitors, Classes Xb. and XXXIa.—1. Yes. 2. Direct public judgment; objections to awards are rather against a system imperfectly worked than against the principle. 3. Would not exclude design. 4. Cannot suggest any more satisfactory method. 5. Their firm conviction that no exhibitor should be a juror in his own class. The few cases of abuse that have occurred in the present Exhibition have arisen entirely from the deference that has been shown to such a juror by his fellow-jurors. Juries should be nominated and appointed in a similar manner to previous ones, and each exhibitor should be called upon to fill up a form, stating the reasons for his claim to excellence, and each exhibitor should be allowed to nominate a referee, some one having a knowledge of his particular branch of manufacture. The juries might then, from the various nominations for referees, be enabled to select whoever, and as many as they pleased, should they feel the want of any assistance with reference to any particular

decision. 6. If a more perfect system in the working of juries can be carried out, the power of appeal is undesirable. 8. Express their hearty concurrence in the principle of giving one medal of degree, and publishing reasons for the awards; think this the most intelligent and just course that can be adopted towards the whole body of exhibitors.

FREDERICK ELKINGTON, Juror, Class XXXIII.—1. Yes, but the three classes of awards. 2. His experience convinces him of the necessity of medals, but the difficulties of juries are increased by having only one medal to award. 3. Sculpture needs no awards. 4. As manufacturers are jurors, there should be jurors' medals, as without there is great difficulty in getting manufacturers to act as jurors. 6. Certainly not.

ELKINGTON AND Co., Exhibitors in Classes XXXIII. and XXXIX. — 1. Yes. 2. Bring meritorious works into notice, and act as incentives to rising houses. 3. Painting and sculpture should be excluded, but fine art in metal and designs should not be excluded. 4. There should be jurors' medals for jurors who are exhibitors, as without them there is a difficulty in getting practical men to act. 6. Decidedly not. 8. There should be three grades of medals. The present plan is not satisfactory either to jurors or exhibitors; the plan of 1851 much better.

GEORGE ELLIS, Exhibitor, Class XIIa.—1. Yes. 2. Desired by exhibitors, and are incentives to exertion. 3. Should not be excluded, but awards should be made to the artist or designer, and not to the exhibitor. 4. Each class should elect its own "examiners," a better term than jurors, which implies that they are *sworn*. 5. Each class should have twelve examiners, nine a quorum, the majority to decide. Each board of examiners to have a clerk to attend all their meetings and record the proceedings. The names and number of the examiners in attendance on every occasion to be carefully entered, also the number of every article examined and decided upon, and how decided, whether by majority or otherwise. The records of the proceedings to be private till the conclusion of the examiners' labours, and then to be open to the inspection of all exhibitors. Exhibitors only to inspect the records of the classes in which they exhibit. At present there is no record of the opinions of the jury on each article. It is not known how the juries arrive at their decisions, nor does the public know anything of their regulations, if they have any. Such a secret mode of proceeding is by no means in accordance with the spirit of the age, and must be injurious to any cause wherein it is displayed. Thinks medals only desirable when judiciously and consistently employed, which he considers is not the case at the present time, when the same award is given for pickling an onion as for building a ship. Such absence of discrimination of the different grades of merit renders the award, in many instances, not only valueless, but ridiculous. Admits the difficulty of suggesting another system free from defects. If we had in England an order like the French Legion of Honour, and like that, too, conferable on highly distinguished merits, it would, probably, be regarded as a fitting reward for the eminent in science and art; and as it is possible that such an order may be created before another International Exhibition takes place, then an appropriate honour will be at the disposal of the Crown for those who may be recommended as worthy of it. For manufacturing skill, a suitable medal, similar to the present one, would be approved of. 6. None. 8. Exhibitors should be allowed season tickets at half the price charged to the public.

Messrs. FORSTER AND ANDREWS, Exhibitors, Class XVI.—1. Yes. 2. Incentives to excellence. 4. Cannot suggest a better method. 5. Juries should be paid, to make them more responsible, and enable them to give proper time and attention in examining the respective exhibits. At least one member of the jury should be practically acquainted with the class of goods to be examined. In Class XVI. there

should have been an organ-builder to examine the mode of construction and planning of each instrument, as well as the quality of the workmanship. A professor of music is a proper person to give an opinion on tone, but not on construction; neither would a pianoforte-maker be capable any more than an organ builder would be suitable, to decide on the merits of the delicate portions of a pianoforte. 6. Yes, when it can be shown that they have passed over generally acknowledged excellencies; also if it can be shown that the awards made are incorrect, as in the case of organs. One exhibitor has a medal awarded for general excellence and light touch, whereas the pressure required to press down the keys when the whole of the stops are drawn, and the various manuals are coupled, is greater than three times the pressure required for the keys of these exhibitors (refers to printed letters for confirmation). Another exhibitor had a medal whose organ was not heard by the jurors, it being incomplete, and not playable till twelve days after the jury examined the organs.

W. C. GLEN, Commissioner for Jamaica.—1. "Medals" not desirable; but exhibitors must be encouraged by the hope of a reward of some sort for the excellence of their articles. 2. Medals altogether unnecessary and undignified. 3. Authors of works of fine arts and designs as much entitled as others to awards. 4. If juries are properly selected, can suggest no better plan. 5. Mode of appointing jurors at the present Exhibition unobjectionable; but as regards their "proceedings," they should not be secret. Each section of jurors should form an open court. Exhibitors seeking distinction should themselves prefer their claims, specifying the goods and the special merits. Objections from exhibitors of similar articles should be heard. This, of course, subject to some limitation as to costs and otherwise, lest proceedings might be unduly protracted. 6. No. 7. It is not the proper function of the promoters of the Exhibition to bring meritorious productions to the notice of the public. When the jurors have made their awards in the manner suggested, those awards should be duly recorded and published in the official record of the Exhibition.

HENRY GREGORY (Gregory, Cubitt, and Co.), Exhibitor, Class XXVIIb.—1. Yes; but juries and their proceedings must be improved; jurors must have correct knowledge, and see everything. 2. Exhibitors are at great toil and expense, and expect to receive some recognition, but a debatable question whether by medals or classified lists of names, like university honour lists. 3. Painting and statuary should be excluded; there is, as regards them, no sufficient universal standard of taste, and thus there can be no competition. Paintings and statuary remain as monuments of their authors' talent and genius. As regards designs for public buildings, bridges, &c., there should be some notice, as they are not preserved. 4. The public must admit that the jurors, upon the whole, have taken great pains and exercised much activity, thereby producing most valuable and well digested information, which, without some such process, would never have become generally known. Merchants and factors of London and other large cities of the kingdom, accustomed to constant mercantile pursuits, exercised daily in much traffic, interested both in buying and selling, and searching after the newest productions of manufacture, are, many of them, men possessing a high spirit of independence and self-respect, with, often, much sterling ability, and would exercise no thought but that which would be for the development of truth, the real advancement of knowledge, and the interest of the Exhibition in every way. 6. Competent juries can therefore be found; should be selected early, in order to obtain information as to their fitness, before final appointment. Suggests various details for improving procedure; a member of a firm here, and also of one in the colonies, who simply finds capital for the latter, being a juror, ought not to incapacitate the colonial house from receiving a

medal, though in all other cases a juror, exhibitor, or member of firm exhibiting should be incapacitated, and the firm also, from receiving a medal in any class whatever, though honourable mention might be allowed. 6. The necessity of a court of appeal; never right that the jurors should be absolute; without court of appeal justice would fall short—justice to solid, undeniable claims and indisputable errors; for want of this there was absence of satisfaction to exhibitors. In cases where manifest error had been made from imperfect information, if corrected before the award had been made, it would have entirely changed the decision of the jurors. Instances of foreigners making use of English materials, and exhibiting them as proceeds of their own country, and Englishmen using French dyes, representing them as English, much misled the jurors, and caused them to make very different awards to what they would otherwise have done. A court of appeal would save commissioners from the frequent remark that it was an insult to all sense of right that no appeal could be made to correct inadvertent errors, caused by defects of information and judgment, whereby manifest wrong had been done to an exhibitor. As regards the award for a medal, the appeal should be confined to those exhibitors who could show a manifest error, the secretaries of the section having the power to reject or accept any appeal previous to its being brought before the Council. The secretaries of the juries would be very suitable men to form the courts of appeal, with any addition that the council of chairmen might think necessary. There are thirty-six classes; these might be again divided into three, appropriating twelve divisions to each twelve secretaries, as courts of appeal, with power to award the honour, of whatever nature it might be, subject to the confirmation of the council of chairmen. A court of appeal formed somewhat after this plan might be sufficient to answer all that was required, and satisfy every exhibitor. 7. Instead of an award by medals, would suggest the classification of the names of the exhibitors, as before stated; might consist of three classes, those now receiving a medal to be classed as No. 1, those obtaining honourable mention as No. 2, and all others to be included in No. 3; the names of the exhibitors classed in Nos. 2 and 3 to be placed alphabetically, but those classed in No. 1 to be arranged according to their degree of merit; the advantage of this system would show itself in several ways,—take, for instance, the case of three exhibitors, all deserving and receiving the honour of being placed in Class No. 1, from some acknowledged improvement in the articles they exhibited, yet they might differ much in degree of originality and perfection of design; the most perfect of the three would receive the more honourable distinction of being placed as senior in the list. At present there is no distinction, all receiving the same award, though differing much in point of merit; all other exhibitors would also share in some degree the notice of the public; at present those receiving no award are passed over. The propriety of allowing individuals to exhibit any article, not of their own production, may be a question of some consideration; freedom, however, having been given in this particular to the present exhibitors, would suggest the alteration that in the catalogue such articles should be particularly noticed as designed by Mr. A. B., of London, manufactured by Mr. C., of Birmingham. From distant places an extension of time should be allowed for admission of the articles for exhibition, as many arrived too late for the inspection of the juries. Desirable, immediately after the first juries are dissolved, to form another jury from the secretaries of the section, to examine all foreign goods arriving too late, from long distances, and any cases omitted in the previous examination, rather than leaving it to the secretary to make these inspections entirely by himself, which was neither satisfactory to him nor fair towards the exhibitors.

WALTER HALL (Wells and Hall), Exhibitors, Class XIII.—1. Yes, if any note is to be taken of superior excellence; and whatever course is taken to single out such cases, will amount to precisely the same thing. All the

difference there is between awarding a medal and reporting an exhibitor's merit, either by official document or any other means, is just that which exists between a Bank of England note and its value in gold. 2. By what other means are you to indicate onward progress and rescue deserving cases from the vast mass of productions which have no particular merit? If it be insisted upon that superior excellence, whether it be in novelty of design, exquisite workmanship, or what not, will always meet with due appreciation, I answer, that excellence is just as likely, nay, more likely, to be lost in a crowd, than if it were fated to waste its sweetness on the desert air. Assuming, however, that merit would meet with due appreciation thus left, and that the exhibitors who have thus shown surpassing excellence should be raised to the pinnacle of fame, as it were, by the public voice; yet, in another decade, what would be left to mark the position once occupied, since intervening years would obliterate the traces of a superiority recorded only on the shifting sand of public favour. On the other hand, if awards be made, of whatever description, you then enduringly chronicle matter which ought not to go unrecorded. The rounds on the ladder of advancement are thus traced, and the starting points fixed from which, in years to come, may be measured the altitude attained. 3. Why not? Some think that Works of Art ought not to be admitted in International Exhibitions. We do right to admit them; but only half do it if we exclude them from the awards. 4. No; the method is English, and is therefore rooted in good soil. Know of no better method of trial than by jury. Like all other good things, it may be abused; but this is no argument against it. In choosing a jury, a due regard is had not to choose the friends or relatives of those exhibiting. No better method than the appointment of jurors for making awards can be suggested. 5. The jurors should be chosen by the exhibitors, and them only. The Commissioners have no right to meddle in the matter. 6. No; if the juries be rightly constituted, it will never be required except by people having an overweening estimation of their own productions, which may safely be taken to indicate a total lack of extraordinary merit; of course such people would never be satisfied unless the jurors acknowledged the fictitious standard to which they aspire. If, however, it should happen that the exhibitors of any class have not justice done them, through incompetence or any other shortcoming of the jurors, appeals even then should not be allowed, since the exhibitors having made their own choice, ought to abide by the decision, and thus gather wisdom from experience, and learn to be more discreet next time; indeed, if it were laid down as a law, not to be departed from, that appeals from the decision of the jurors would not be allowed, it would so influence the exhibitors in their selection, that it is more than probable no occasion would arise that would justify such appeal. Universal satisfaction cannot be expected, but if the system of jurors' awards would not meet the case, appeals from their decisions would not mend matters, therefore they should not be allowed, unless an extraordinary case should occur, in which the whole class should unanimously join in recommending a reconsideration thereof. 7. As before insisted on, whatever plan is adopted to signalise instances of superior skill and excellence, would be just tantamount to the award of a medal; the value of a medal as such, with its hieroglyphic to boot, might perhaps be represented by the lowest current coin of the realm, but as a mark of honourable and meritorious distinction, it is of great price and inestimable value to the recipient; so also would be any other means to the same end. Whether it would be of the most advantage to an exhibitor to receive a medal, have his name placed high in a eulogistic report, published officially, or be mentioned by the lips of eloquence before a countless multitude with a flourish of trumpets all are equally available for advertising purposes. 8. Yes; double your number of classes, rather than have articles heterogeneously intermingled, which are as dis-

tingent from each other as possible, however apparent the similarity may be. Look at Class XIII.: Electrical instruments and telegraph cables, &c., most assuredly should have formed a distinct and separate class, and not have been classed with philosophical instruments and processes depending on their use. How was it possible for these exhibitors to have justice done to them, seeing that our of seventeen jurors and experts, three only were at all acquainted with electrical and telegraphic matters, however efficient they may have been to grapple with the philosophical portion. Make it a condition that no exhibitor be eligible to serve as a juror, neither in his own class nor any other; it is an anomalous position for a man to hold, and must be inimical to that fairness and impartiality which should characterise all the proceedings.

DANIEL HANBURY, F. L. S., Juror and Secretary, Class IIb.—1. I do not consider them desirable. 2. On account of the difficulty of making a fair and satisfactory award. This reason is, however, far more cogent in the case of some articles than of others. 7. It must be left to the public to judge of the merits of each production.

WILLIAM HAWES, Vice-President and Member of the Council of the Society of Arts.—1. I think them undesirable; the experience of 1851, 1855, and 1862 proving the great difficulty of making awards fairly as between exhibitors, and justly as regards the public. 2. Because it is all but impossible to prevent errors in the adjudication of awards, which errors must cause great injury to exhibitors, mislead the public, and injure International Exhibitions in the estimation of exhibitors and the public, whose opinion cannot fail to be influenced by the statements of injured exhibitors. This liability to error arises from several causes:—(a.) From the constitution of juries, which precludes them as a body from having sufficient practical and technical knowledge of each of the great variety of subjects submitted to them, and which knowledge can alone enable them to decide justly upon the superiority of one manufacturer over others. (b.) From this deficiency of knowledge in the jury as a whole, throwing the practical decision of each award upon that portion of the jury (or it may be one juror only) which professes to have an accurate knowledge of all the conditions that determine the superiority of each article; as, for instance, the skill displayed in its manipulation, its cheapness, its superiority of quality, either at increased or decreased cost; the rapidity of production; the use of new materials, entirely or partially, to produce either a better, cheaper, or more saleable commodity; its fitness for particular climates or markets, and whether the article exhibited is a mere "tour de force" produced without reference to the cost of the materials, the labour bestowed upon it, or the commercial demand for it. (c.) From such knowledge, partially or wholly, being possessed by jurors only, who are or have been engaged in the manufacture or production of the article under inspection, whereby, and very probably, the lesser knowledge and enterprise of a rival becomes the standard to test superior knowledge, skill in manipulation and invention, or the knowledge of a retired manufacturer becomes the standard by which improvements in principle or practice, which in his time were never thought of, are to be valued. (d.) Besides these sources of error, there are those caused by accidental omissions and by defective judgment, and also those most difficult to deal with, arising from personal feelings and interests, which lead either to a wrong adjudication or to the omission of entire classes, on account of the injury which giving medals of superiority to one would cause to friends of jurors, or even to jurors themselves. 3. Yes, because the difficulty of adjudication is greater than in respect of manufactures and other products. The superiority of one work of Fine Art or design over another will often depend upon qualities which are not capable of exact expression, and respecting which equally good judges, whether artists or amateurs, may most honestly differ. 4. Objecting to the system of awards for merit, I need not notice it. 5. I think juries

should report on actual and relative progress only, and not reward. This would, I think, make their reports more interesting and useful to the public, and would secure as jurors the services of many practical men, who are now excluded on account of their being exhibitors competing for prizes. 6. If juries be entrusted with the duty of making awards, then I think their decisions ought to be supervised by an independent (perhaps a paid) body before publication; but I do not think an appeal after publication ought to be allowed. Too much care cannot be taken to secure correct adjudication. A reward given or withheld unduly, whether from accidental omission, error of judgment, want of knowledge, rival interests affecting the decision, or any other cause, misleads the public, and is a serious injury to every other producer of the same article, whether exhibitor or not. 7. The newspapers, daily and weekly, conducted as they now are, afford the public every possible information as to the relative merits of the articles exhibited, and place each exhibitor in his proper relative position. I would call attention particularly to the series of articles now appearing in the *Times*. In 1851 progressive prizes were considered necessary. In 1862 but one prize and an honourable mention is allowed to be sufficient for the object in view, and I believe in another ten years, if the prize system be abolished, the desire to obtain favourable notices in the periodical press, written as they will then be under a deeper sense of responsibility than now, when prizes are given, will be a sufficient stimulus to manufacturers and producers to exhibit, and will be considered by them and the public as a safer index of merit than the award of a prize by a jury. I believe, also, that while prizes stimulate one class of exhibitors, who will resort to every possible means to obtain them, they discourage and injure those who rely solely on the intrinsic merit of the articles they exhibit being appreciated by the jury. The fact of the award of a prize, by a jury appointed by the Royal Commissioners, may be circulated all over the world, but that it was made on account of the most trifling superiority over other exhibitors, or by a vote of a very small majority of the jury, cannot be known; yet the award of the prize stands forward as a natural declaration of superiority. Whether this be just to other exhibitors, or to the public, is a point on which I have no doubt. On the other hand, the criticisms in the public press point out the special and comparative merits of all articles exhibited. Praise is meted out for one point of excellence for one exhibitor, and for another point to another in the same description of manufacture or produce; and the merchant, the dealer, and the public, are left to decide on the practical and commercial value of each as a whole, without being unduly influenced by the conclusions of a jury, which, whether right or wrong, or partially right and partially wrong, give to every article rewarded an artificial value, and enables a prizeholder to obtain an undue advantage over his rivals; further, the award of a prize offers no security to the public that the articles sold under the same description are of equal value to those for which the prize was given. The award then becomes, in the hands of many, a means of misleading the public, inducing it to rely on the judgment of a publicly-appointed though irresponsible body, instead of forming by careful examination an opinion of its own. 8. The opinions I have expressed are given without having a clear estimate in my mind of the value of the prize system as an inducement to manufacturers and others to exhibit. Upon this part of the subject I wish to speak cautiously. In considering it we ought to inquire what is the object of an International Exhibition, and what is the object of prizes to the exhibitors. The object of an International Exhibition is not to reward exhibitors, but, by obtaining great collections of industry and art at certain recurring periods, to mark the progress, and to stimulate the industrial energies of the world, and to afford information as to the suitability of each country to supply certain products, natural or artificial, at the lowest rates, and of the best quality, whereby the waste of industry in

producing similar articles in less favourable situations may be avoided. The object of giving prizes is to offer an inducement to all classes of producers, by the commercial advantages which attach to the notoriety of being prizeholders, to send articles to the Exhibition. If without prizes an Exhibition could not be held, nothing more need be said; and all we can do is to make the distribution as fair and honest as possible, confining it strictly to inventors, designers, manufacturers, and producers. But, giving the best consideration in my power to the subject, I believe that when the next Exhibition is held, the prospect of obtaining favourable notices and criticisms in our periodical press, and in the reports of the juries, will secure an ample representation of the progress of art and industry.

J. HARRISON AND SONS, Exhibitors, Class VIIA.—1. No. 2. The public the best judges, and the best able to give an adequate reward. 3. If there are any awards, they ought not to be excluded. 4. If any award made, the appointment of jurors, rightly made, the best method. 5. No one, directly or indirectly engaged in the trade of the class whereon he is sought as a juror, ought to be selected. Trade jealousy and prejudice is apt to creep in, and has, in our opinion, been apparent in many awards and omissions of award. The awards of the jurors ought to be made public before they (the jurors) are finally dismissed, so as to give an opportunity for re-adjudication, where necessary. 6. Most decidedly; otherwise great injustice may be and has been done. 7. The mere exhibition of meritorious productions, and the usual common-sense methods, whereby any article of usefulness is brought to public notice, are quite sufficient. 8. No.

ALEXANDER HARVEY, Juror, Class XXIII.—1. No. 2. Because, from my experience as a Juror both in 1851 and during the present year, I have found that the awards of juries, however honestly made, have given rise to a great amount of dissatisfaction and jealousy among exhibitors. 3. Yes, particularly works of fine art, as it is often the case that deserving and obscure merit is pushed aside to make way for a name which may be already famous, thus giving rise to discontent and jealousy. As to works of design, if awards are to be given, they are less liable to the above objection. 4. No. 5. No. 6. If any mistake or oversight has been made in the decision of a jury, a recommendation might be made for a reconsideration of the subject by the particular jury; but I could not recommend an appeal to any other quarter, not even to the chairmen of juries. 7. Does not think awards desirable, but would leave the decision of the merits of articles exhibited to the public. 8. Has no suggestion to offer on this head, but would express an opinion that any Exhibition of a similar nature as the present now open, if got up during the present generation, would not be successful; reasons for thinking so are that, on all hands, he has found dissatisfaction among exhibitors, who have not been noticed by the juries, after they have caused themselves a great amount of trouble and expense in preparing for the Exhibition; also the parsimonious treatment they have, in many instances, received from the Commissioners; does not think that the same parties would again exhibit, but would, most likely, do all in their power to persuade others not to exhibit.

SAMUEL HIGHLEY, Exhibitor in Classes XIII., XIV., and XXIX.—1. Yes, by medals, for ingenuity, novelty of design, for excellence of workmanship, and for cheapness combined with good workmanship. One bronze class medal to be awarded, for one or all of these reasons, to every exhibitor whose contributions may be worthy of recognition. [By class medal is meant a medal bearing an inscription indicating the class of objects for which it was awarded. For obvious reasons every medal ought to be engraved with the name of the exhibitor to whom it was awarded.] 2. Without award of medals exhibitions would degenerate into mere bazaars and advertising mediums, for tradesmen would think such occasions advantageous for bringing their names and wares before the public; but

there would be no special inducement for them to enter into greater expenses than such a feeling indicated as necessary for that purpose; and, as a rule, their ordinary wares would meet the requirement of the moment; but if, on the other hand, there was a chance of attaining distinction by the recognition of a medal, then there would be an inducement to tax both brain and pocket to produce novelties and bring forth inventions. The recognition of merit by a medal is of the greatest value and encouragement to young and ambitious houses. 4. No; if men are selected who are free from trade interests or known prejudices, and who are willing to sign a declaration that they will fulfil the duties expected of those who accept the honours of jurors. 5. *a.* The arrangements for the election of jurors were, on the present occasion, very imperfect, for as every exhibitor was requested to name three such persons as might suggest themselves, it was hardly to be expected that there would be such an unanimity of opinion as to secure the election of those best suited for the duties of jurors. The voice of the exhibitors must have had very little weight in the selection of those appointed by the Royal Commissioners. A better plan would be for the sub-committees of classes and sub-classes (formed of exhibitors), to give in a list (of? number of names) of those whom they considered most fitted to fulfil the important duties of jurors, and whom they had ascertained were willing to serve. These lists should then be printed, and a copy sent to every exhibitor in each class, with a request that he should select a fixed number, and indicate the names of those that are individually considered most fitted for the class. The election of jurors would then be entirely and really (as it ought to be) in the hands of each trade, the chairman of juries alone being elected by the Royal Commissioners. *b.* More time ought to be allowed for the juries to make their examination of the contents of the Exhibition than was given on the present occasion. *c.* The jurors ought to examine the contributions of every exhibitor, or formally enter upon the minutes of their proceedings the reason why such an examination could not be made. *d.* Facilities should be provided for testing the character of the articles submitted to the judgment of the juries, for it should not be taken for granted that because articles are produced by old established or celebrated houses, that articles said to be improvements are necessarily so; on the other hand, it must be of the greatest satisfaction to all conscientious producers, that the favourable opinions of a jury are founded on absolute experience by putting their contributions to a proper test as to their value. *e.* The secretaries of juries should be paid officers, for on the present occasion many gentlemen did not completely fulfil their honorary duties. 6. *a.* Decidedly; especially if the jurors have omitted properly to examine or test the contributions of an exhibitor. *b.* On the other hand, against an award to any exhibitor who can be proved to have received an award for an article or articles he has neither designed nor manufactured. 8. *a.* That these Exhibition medals should rank as the insignia of a civil "Order of Merit." *b.* That if this suggestion were carried out, it would cause the jurors to exercise excessive care in making their awards, and make a medal of value and importance. *c.* That the mere advertising spirit ought in every way to be discouraged by all officers of the Exhibition, which was far from being the case on the present occasion. *d.* That the honorary services of those jurors who have conscientiously fulfilled their duties (to be tested by a certain number of attendances), should be acknowledged by a silver "Juror's (Class) Medal."

(To be continued.)

SANFORD AND MALLORY'S PATENT FIBRE AND FLAX SCUTCHING MACHINES.

FIBRE MACHINES.

This machine, which is intended for extracting the fibres from the leaves and stalks of fibre-bearing plants

whilst in the green state, was shown in the machinery department of the International Exhibition. The importance of this invention will be recognised by all who are conversant with the methods now in use for extracting fibres from the plants containing them. The processes at present generally in use in the countries where the fibres are grown are of the most primitive and rude description; pounding with a mallet, scraping with a sharp stick, ox rib bone, or piece of hoop iron, and washing in water, are the laborious means by which a few pounds of such fibre as Sisal Hemp or the Pine Apple, are extracted per day. Tropical countries abound in plants containing very valuable fibres suitable for textile purposes, and which would be largely used in manufactures, were some simple method known of cheaply and expeditiously bringing them into a mercantile condition. This method the inventors believe they have found. It has been ascertained that the fibres of all plants are naturally white whilst the plants are in a green or growing state, and only become discoloured by dessication or decay, and being exposed to the action of the atmosphere after being cut, the juices and gums which envelope the fibres then undergoing a chemical action, whereby they become fixed in the fibres, rendering them discoloured and hard, and consequently a bleaching and softening process is necessary before they can be advantageously employed in manufactures. These juices and gums are soluble in cold water whilst the plants are in a green state; and if the leaves or stalks are then subjected to a combing and hackling process in combination with the use of water, the extraneous matters will be washed away, and fibres produced of full strength, white colour, and soft; this last is a most important point to the manufacturer, and depending not so much upon the nature of the plant (as supposed) as upon the amount of gum left in the fibre during the extracting process, which gum renders many very valuable fibres harsh and brittle, and difficult to use for textile purposes. The machine consists of a frame-work, about 4 feet square, carrying a cylinder covered with an elastic substance, such as vulcanised rubber, and armed transversely with teeth and scrapers of certain construction, adapted to the plant to be worked. This cylinder, for about one-half of its circumference, runs in contact with, and drives an endless elastic belt, armed precisely as the cylinder, with similarly shaped teeth and scrapers, and capable, by means of adjusting screws, of being made to bear with more or less pressure against the cylinder. There is a pair of feed rollers, one elastic and the other of corrugated metal, which move at a slower speed than the cylinder and belt, and hold the leaves, stalks, or fibres firmly, whilst feeding them in slowly to the more rapidly-moving cylinder and belt, the result being a combing and scraping motion, which eventually loosens and removes the extraneous matters. The feed rollers have a reverse motion, and when about one-half the length of the leaves or stalks is fed in, the reverse motion is put in action by the foot or hand of the operator, the cleansed portion withdrawn, and the other end presented and operated on in like manner. During the operation, a stream of water is allowed to flow over the cylinder and belt, and through the fibres, effectually dissolving and washing away the gums and juices, and preventing the atmosphere from acting on the same, and giving, as the result of the process, white, soft, and even fibres. It is stated that the machine can be worked by one person, with the help of one or two children to hand him the leaves or stalks, and remove the fibres as cleaned; that it requires less than one horse power to drive; and where steady steam or water-power is not available, a portable horse-power is the best. These have been fitted to several of the machines, to go to India. The portable horse-powers possess the advantage of being easily moved from place to place with the machine, which weighs only 9 cwt. The teeth and scrapers are so fastened as to be easily removed and replaced by others of different formation, so as to adapt the machine to work

any kind of plant. The machine will clean all Endogenous plants, such as the *Agave*, *Bromelia*, or Pine Apple, *Musa*, or Plantain, and *Phormium tenax*, or New Zealand Flax; also the different varieties of the *Sanseveria*, which produce valuable fibres. It will also clean many of the Exogens, such as Hemp, Rhea or China Grass, Jute, Sunn Hemp, &c. Mr. E. G. Squier, in his work on Tropical Fibres, says that the work of a native Yucatan is about six pounds of Sisal hemp per day. In Spain a man's work is six to eight leaves of the *Agave Americana* per day, producing about half as many pounds of fibre. The inventors state that this machine will run twelve to fifteen hundred averaged sized *Agave* leaves per day. In the Philippines the produce of a man's labour in Manila hemp, extracted from the *Musa textilis*, is about 24lbs.; the machine will give about ten times that quantity. It will clean six to eight thousand leaves of the Pine Apple, and about as many of the *Phormium tenax*, per day. Where the leaves are so thick as not to be easily passed through the feed-rollers, they require to be crushed to the requisite thinness. For this purpose a peculiar description of roller has been designed, whereby the leaves, besides being crushed, are divided into strips lengthways, thus facilitating the operation of the machine, and increasing the quantity worked per day. The patentees are now building machines of a larger size than the one shown in the International Exhibition, suited to produce fibres seven feet in length. The diameter of the cylinder is 30 inches, and the width of feed 16 inches; weight about 9 cwt.; speed required, 80 to 90 revolutions per minute.

FLAX SCUTCHING MACHINE.

Messrs. Sanford and Mallory have also introduced a flax scutching machine on the same principle as the fibre machine. The cylinder is about 20 inches diameter, and the feed 26 inches. The principle upon which it works is this:—The flax-straw, in a thin stratum, is passed through a pair of feeding-rollers, one of which is elastic, the rollers allowing the straw to pass through them at the rate of one hundred and sixty feet per minute. As it passes through the feed rollers it comes in contact with a cylinder and belt, which are running (one driving the other) at the rate of eight hundred feet per minute; the belt and cylinder being armed with teeth and scrapers, and arranged so that the straw must pass between them, the bars or scrapers and teeth taking hold of the flax-straw upon both sides of the straw, the set of bars upon the belt striking the straw on one side about one-eighth of an inch in advance of the bar on the cylinder, breaking the woody part of the straw very short, while the teeth on both cylinder and belt keep the fibres perfectly straight, so that most of the woody particles drop through the bars or scrapers on the belt (the belt being open for that purpose), the remaining *shooves* are scraped off and carried out of the fibre at the end of the machine, through channels which the teeth keep constantly open. The construction of the machine is such that the flax-straw upon being fed in is first bent one way and then the other. The first effect of this bending motion is to relieve the fibre from the *boon* longitudinally, the next effect is to break it, but not until after the bars have first loosened it. This action avoids the possibility of injuring the fibre by the teeth and scrapers in removing the *boon* or *shoove*. To work this machine, one person (a boy or girl may do it) places the flax-straw in a clamp about two and a half feet long, and an inch wide by one-half inch thick, the inner surface being lined with rubber, so as to yield to the unevenness of the straw as it is laid in it. The clamp is jointed at one end like the ordinary "newspaper holder," and is very like it in appearance. Each clamp, filled with the straw, is laid upon a table near the machine, and is then taken by another person (boy or girl), who presents it to the feed rollers, holding one end of the clamp until the rollers have drawn the straw in; after the straw has been drawn a little more than half its length, the operator then steps upon a *treddle*, which reverses the motion of the feed

rollers (the feed rollers being so arranged that they feed the flax out five times as fast as it was fed in). The operator then presents the other end of the straw held in the clamp, which is fed in as before. The product, after undergoing this operation, is in a fit state to spin into all goods of a coarse character, such as twine, towelling, &c., &c., but for fine goods, as with flax fibre dressed by all other modes, it has to pass through a subsequent hackling process, but with this remarkable difference: The fibres cleaned by this machine being all unbroken and uninjured, and each fibre being perfectly parallel with every other fibre, and being free from *boon*, the hackling process is attended with very little waste. The power required to drive is about half a horse power. The speed requires to be varied according to the degree of retting the straw has received. For ordinary retted straw about 150 revolutions per minute are sufficient; for more tender and over-retted, 125 will suffice; and by means of spare pinions the motion of the feed-rollers can be increased or diminished so as to give less or more work, according to the nature of the straw to be cleaned. The amount of flax fibre produced in the United States in the year 1850 was 7,806,809 pounds. Had the straw from which this amount of fibre was taken been dressed by this machine, the yield would have been, according to the calculation of the inventor, not less than 10,409,078 pounds. The increased product or the flax saved, at present prices, would be worth 312,271 86 dollars. It is well known that flax can be successfully cultivated in all the Northern States. If in addition to the value of the seed—sufficient of itself to pay the entire cost of cultivation—the straw can be made a source of large profit, a wide field of successful industry will be opened.

Flax-dressing by the hand process is so tedious, and the daily yield so small, as to render it unprofitable to the farmer; and as few farmers have sufficient capital to enable them to erect suitable buildings, and to purchase the expensive machinery now in use for flax-dressing, they are compelled, if they raise flax at all, to sell the straw to the mill owner. Farmers living at a distance from a mill cannot afford to cart the straw to it; hence, the amount of flax dressed is limited, and the price high. Had every farmer a machine which could be driven by horse power, and be attended by boys or girls, without risk to the operatives, it would not be long before a linen fabric could be purchased for a price less even than that of cotton. Great efforts have been made in this country, as well as in Europe, to devise such a machine, but hitherto without success. Mr. Sanford considers that the machine invented by him, which we shall presently explain, will fully answer that important end.

Home Correspondence.

MR. HUNT'S PAPER ON MINES.

SIR,—All subjects that do not admit of demonstration must be deemed hypothetical. However, in our theories, we must be governed by the knowledge which science has revealed. The laws of nature are eternal—they admit of no mutability. Man's interpretation of a law of nature may be erroneous, but never the law itself. Geological science has demonstrated—beyond all cavil or dispute—that there are two great series of rocks covering the earth's surface: the first called igneous or primitive, the second sedimentary or aqueous. The proofs of the primary being igneous consist in their being non-stratified, compact, and crystalline, which could not have arisen from any other condition than that of intense heat; whereas the secondary indicate that they are the result of disintegration of the primitive by the action of water, laying on it in layers or stratifications. It necessarily follows that, if at a remote period of the earth's existence it was in a liquid molten state, that at a still much more remote period it must have been in the condition of a

dense gas or vapour. During this free or gaseous state, all the materials arranged themselves in accordance with their specific gravities. This is the reason why the denser metals, as gold, platinum, and iridium, are so scarce in proportion to those of lesser density, such as iron, copper, lead, &c.

Geogonic measurements indicate that the earth is a spheroid, flattened at the poles in the direction of the axis of rotation. This modelling would take place on any fluid mass subject to a rotary motion. Radiation for vast periods would cause it to cool.

It is estimated from the gradual increase of heat experienced as we descend into the earth, that at a depth of less than 30 miles the heat would be over 3,000° Fahr.

During the period of the consolidation of the primitive rocks, most of those substances which enter into the secondary or stratified rocks, with elements of the water which constitutes the ocean, were in a gaseous state. As the cooling advanced these were condensed on the surface—water covered the face of the earth.

Antecedent to this period numerous convulsions and upheavings had taken place, consequent on the contraction of the material forming the crust of the earth. It was at this period that the first fissures, rents, veins, or lodes, were formed. It was not, however, until the deposit of the secondary rocks, that those gigantic quartz veins were formed. The contractions at this period must have exerted enormous force on the interior molten mass, which caused the fissures, lodes, or veins, to be filled with a heterogeneous mass, some in a native state, as gold, or alloyed with silver, platinum, iridium, palladium, &c. Most, however, have combined with sulphur as sulphides, as silver, lead, mercury, copper, iron; others, as silicates or carbonates, &c., &c.

Mineral veins present no uniformity, sometimes for hundreds of yards of from 20 to 50 feet in width—these suddenly contracting, so that the walls of the lode are in contact with each other. This may continue for any extent, for the direction of the lode may be lost altogether, or may as suddenly reappear after cutting through “the horse,” as this contact is called by miners. It will be perceived that the deviation, size, and all other conditions appertaining to veins or lodes have been determined by mechanical force, consequent on the numerous catastrophes which have accompanied the earth's transition from the fluid to the solid state.

The splitting of the globe, subsequent to the first strata, has been in a different direction. This has caused the nonconformity between the two strata, and should this re-occur, the same deviation would exist. All veins may be divided into three classes. 1st. Those of purely igneous origin. 2nd. Those of a mixed igneous and aqueous. 3rd. Those purely aqueous. It is impossible for any one who has practically attended to the working of a mine not to come to the conclusion that the substances which compose the lode were not forced up in the most heterogeneous manner. The sulphides of silver and lead, 100 or 1000 feet, then large deposits of native silver, then lead, or even gold, copper, antimony, bismuth, &c. How could sulphur have combined with metals like iron, copper, mercury, lead, antimony, &c., in the form in which it is plentifully formed in nature if fire had not been the active agent to produce these sulphides?

I have examined many of the principal mines of Mexico, Chili, Peru, New Granada, and California. One remarkable deposit of gold in the latter country was at Carson's-hill, which is the highest point by some 3,000 feet than the surrounding country, where about £300,000 worth of gold was extracted in the space of about 50 feet of the quartz vein, which was about 16 to 18 feet in width. The lode below this “pocket” or “bunch” of gold was without a particle of the precious metal. In this case the deposition must have been purely igneous. On the contrary, in Mexico, I saw a magnificent cluster of quartz crystals, permeated and interlaced with threads of native silver.

Here was the conjoint action of fire and water. In the case of the carbonates of zinc, lime, &c., there must have been the action of water.

From the foregoing remarks it must be evident no amount of scientific education could enable the miner to predict the character of a lode, or the value of a mineral deposit. If the structure of veins were regular, or their contents not of the most dissimilar character, then we might be able to arrive at correct data. As it is, we must be content to delve, and with that experience alone must we rest content. No doubt a scientific education will enhance the position of the miner, as it does all other vocations. Practice alone gives a certain knowledge, which is essential to success. No class of men—at least so far as my experience warrants me in forming a conclusion—are more able than the English miners; each is an adept in his own particular speciality. The copper or tin miner of Cornwall will not be conversant with a coal mine, nor the collier with the indications of a rich deposit of lead.

My desire has been to concentrate, in the most succinct form, ideas relative to the origin and formation of metallic veins. If I have failed to do so, my apology must be that the subject, from its very nature, is one which would require more space than you would be able to place at my disposal.

I am, &c.,

ROBT. H. COLLYER, M.D., F.C.S., &c., &c.
Beta-house, 8, Alpha-road, N.W., Dec. 22.

MR. TAYLOR'S PAPER ON LABOURERS' COTTAGES.

SIR,—Having been present at the meeting of the Society of Arts when the above paper was read, and being much interested in the subject, and I may say gratified by the new light thrown upon it by Mr. Taylor, I venture to hope you will allow me a few lines to reply to some portions of Mr. Reveley's letter, which appeared in the succeeding number of your *Journal*.

I cannot see that it was the sole aim of Mr. Taylor to impress the meeting with an idea that “none but patented articles should be used in building cottages,” but rather to show that the manner of applying the materials now in use is faulty, and not the materials themselves, and that by proper adaptation the same materials may be available in a much improved form, for, you will observe throughout, that no new substance is in any case proposed in lieu of those which have been in use for centuries.

Mr. Reveley speaks of the abandonment of bricks and mortar. It is difficult to imagine how Mr. Reveley could have listened to Mr. Taylor's paper and have fallen into such an error, when the whole of the proposed walls were to be constructed either wholly of bricks, or faced with brick backed by concrete, though, when combined with the latter material, the facing bricks were shown of an improved form for the purpose, and this latter combination Mr. Taylor has shown will make a good and substantial wall more economical than the ordinary brick wall, which, in building a cottage, where every penny is an object, is certainly a point gained. This form of brick, besides being lighter, less costly, and of better appearance, having a face equal to stock brick, is so burnt in blocks, as to produce six bricks, and can be handled more readily, and packed in less space, than ordinary bricks, and can be applied with concrete where bricks could not be sent on account of the cost of carriage, as in this case, only sufficient would be required for facing the walls, whereas, in the other, the whole of the thickness of the wall would require to be built solid.

This cannot be called an abandonment of brickwork, but an improved application of the old material.

I think the great merit of Mr. Taylor's paper lies in showing how existing evils may be overcome. Take, for instance, our cottage paving tile, good in itself, but made unbearable by the manner in which it is laid upon the ground, by the introduction of air beneath; in a simple

way it is made a good, dry, clean, and suitable paving for cottage floors.

That portion of Mr. Reveley's letter referring to ground rents, &c., is not a part of the subject that Mr. Taylor proposed to solve, or could be expected to touch upon under the title of his paper. It would be no cheaper to build a cottage upon a piece of freehold than household land.

Mr. Reveley goes on to state, that it is well known that the "worst bricks and poor lime" are the rule for labourers' cottages, for which reason everyone ought to foster any suggestion likely to prove beneficial, and as Mr. Taylor cannot, I presume, alter the laws so much complained of, which at present exist, the only course open to him is to avail himself of the protection offered him, and patent any improvement he may make so as to secure it against piracy.

Anyone of experience will tell you how a building is likely to turn out if left to the builder alone, and the greater portion of the buildings of which Mr. Reveley complains are so erected, and surely there can be no worse way of going to work (I speak here of the principle) than by allowing exclusively an interested party to carry out the work. Take, for example, any of our churches which have been rebuilt (and disfigured) by the churchwardens, as is usually set forth upon a panel in front of the gallery or other conspicuous place, these men being commonly the builders and authorities of taste in the village, and you have a very fair sample of how work is done by builders in their own way.

Palatial residences for the poor find but little sympathy from Mr. Taylor, as he distinctly said in his paper, "I would prefer to give the labourer a little more than he already has, than strive to make a model labourer or model home."

With the colonising idea, I quite agree with Mr. Reveley, but any one must see the very great difficulties to be overcome to arrive at this end, especially near London. It is very easy to plan out a grand scheme, which would be all that we could desire, and quite a different thing to remedy the existing evils, which should first be done, as a stepping-stone to that which looms but very indistinctly in the distance.

The two-story cottage is all very well for this miniature Canada, but, in the thick of a London slime, it is far better to live as high up above it as we can than be always on a level with and in the midst of it, and, notwithstanding the "waste of human strength" expended in the operation, I cannot agree with Mr. Reveley that the model lodging-houses, or buildings of many stories, are at all inapplicable for large towns and cities, where the ground is not to be had, or, if obtainable, at enormous outlay. The labourer must live within reach of his work.

I am, &c.,

J. W. HALLAM.

Proceedings of Institutions.

DUDLEY MECHANICS' INSTITUTION.—A short time since, the foundation stone of the new Mechanics' Institution building was laid by the Earl of Dudley, supported by the leading noblemen and gentry of the town and neighbourhood. The friends of the Institute, which has now been in existence about 15 years, have long felt the urgent necessity of erecting suitable premises for the accommodation of the various departments of a really efficient Institute, and have been making great exertions for some years past to raise a fund for the purpose. They are now in a fair way of seeing their expectations realised, for they have already sufficient money to enable them to put up the most useful portion of the proposed building, and have received liberal promises of further help. The building is in the Italian palatial style, and will comprise two reading-rooms, library, museum, school-room, class-room, laboratory, public hall for lectures, exchange, &c., and li-

brarian's apartments. On the occasion of laying the corner stone (the building is nearly half erected), a procession was formed to the site, and the ceremony was performed by the noble Earl, in the usual manner. The address, which was presented by the secretary, alluded to the warm interest which his lordship had taken in educational works in the district, and gave a concise account of the past history of the Institute. Allusion was also made to the proposed operations of the society, particularly to the establishment of a trade and mining school worthy of the rich manufacturing and mining district lying round the town. The Earl, in his speech, expressed his interest in the welfare of the Institute, and spoke in general terms of the many advantages which the new Institute is calculated to confer on the town, both as an architectural and educational feature, and concluded by expressing his intention of assisting in the erection of the public hall, which forms so important a feature in the plans. Lord Lyttelton also expressed his sympathy with the movement which that day's proceedings were likely to encourage, and, after alluding to his connection with Dudley, congratulated the town on the prospects of an educational Institution suitable to so populous a centre. In the evening a conversazione and scientific exhibition was held, under the presidency of Lord Lyttelton, when gentlemen from the district gave addresses on subjects connected with the objects of the meeting. A valuable collection of Silurian and other fossils, natural history specimens from the locality, scientific apparatus, diagrams, &c., formed a varied and instructive display, and the day's proceedings throughout were of a most gratifying character.

MEETINGS FOR THE ENSUING WEEK.

- MON.** ...Geological, 6½. Anniversary meeting for the election of officers; after which, Mr. C. Carter Blake will read a paper on the "Fossil Animals of South America."
Medical, 8½. Mr. Hancock, "On the Superiority of Chop-hart's operation, and Excision of the Ankle, over any other method, in all cases admitting of their performance."
- TUES.** ...Pathological, 8. Annual General Meeting.
Royal Institution, 3. Prof. Frankland, F.R.S., "On Air and Water." (Juvenile Lectures.)
Photographic, 8. Mr. Samuel Highley, F.G.S., "Photography in its Application to the Magic Lantern Educationally Considered."
Ethnological, 8.
- WED.** ...Geological, 8. 1. Mr. T. Davidson, F.R.S., "On the Lower Carboniferous Brachiopoda of Nova Scotia." 2. Mr. T. Curley, "On the Gravel-deposits of Ludlow, Hereford, and Skipton." 3. Messrs. George E. Roberts and John Randall, "On the Northerly Extension of the Upper Silurian Passage-beds of Lindley, Salop." Communicated by the President. 4. Mr. George E. Roberts, "On some Crustacean-tracks from the Old Red Sandstone near Ludlow." Communicated by the President.
Pharmaceutical, 8.
R. Soc. Literature, 8½.
- THURS.** ...Royal, 8½.
Antiquaries, 8½.
R. Soc. Club, 6.
Royal Inst., 3. Professor Frankland, F.R.S., "On Air and Water." (Juvenile Lectures.)
- FRI.** ...Astronomical, 8.
Archaeological Inst., 9.

PATENT LAW AMENDMENT ACT.

APPLICATIONS FOR PATENTS AND PROTECTION ALLOWED.
[From Gazette, December 19th, 1862.]

3288. C. Sanderson, Sheffield—An improved mode of manufacturing bands for driving machinery, lifting weights, and other analogous purposes.
3290. J. Hilliar, Balsall Heath, Worcestershire—Imp. in hinges, joints, or connections, and in applying them, parts of which improvements may also be employed for constructive and decorative purposes.
Dated 9th December, 1862.
3296. V. Mirland, Frameries, Belgium—Imp. in manufacturing paste from the dried pulp of rhubarb to be used as preserve.
3298. W. Clark, 53, Chancery-lane—Imp. in photographic apparatus. (A com.)
3303. G. Jeffries, Golden Ball-street, Norwich—Imp. in breech-loading fire-arms.
3304. W. E. Newton, 66, Chancery-lane—Imp. in fire-arms. (A com.)

Dated 10th December, 1862.

3310. S. B. Whitfield, Birmingham—Imp. in the dovetail joints used in metallic bedsteads and other articles of like manufacture.
3314. W. A. Turner, Lawrence Pountney-lane—Imp. in machinery for cutting or paring starch.

Dated 11th December, 1862.

3320. J. R. Breckon, Darlington, and T. Douglas, Crook, Durham—Imp. in the manufacture of fire bricks and other articles usually made of fire clay.
3332. R. Clark, Langloan, Lanark, N.B.—Imp. in machinery or apparatus for boring, winding, and lifting for mining purposes.
3324. J. Imray, 65, Bridge-road, Lambeth—Imp. in apparatus used for mixing and kneading.
3326. T. E. Vickers, Sheffield—Imp. in the construction of ordnance.

[From Gazette, December 26th, 1862.]

Dated 1st September, 1862.

2419. J. Watt, 13, Graham-street, Waiworth, Surrey, and T. S. Haviside, 69, Cornhill—An improved method of treating flax and other similar vegetable fibrous substances to be used as substitutes for cotton.

Dated 3rd September, 1862.

2436. F. C. Bakewell, 6, Haverstock-terrace, Hampstead—Imp. in fire-places and stoves. (A com.)

Dated 4th September, 1862.

2447. J. Platt and W. Richardson, Oldham—Imp. applicable to the burning of bricks, tiles, and other articles of earthenware.
2450. J. Platt and W. Richardson, Oldham—Imp. in the preparation of clay for the manufacture of bricks, tiles, and other articles which may be made of such material.

Dated 15th October, 1862.

2777. W. Wilson, 18A, Wigmore-street—An improved oblong drawing room bagatelle and billiard table, with reversible top, and made in various shapes and sizes.

Dated 16th October, 1862.

2791. G. Berry, 19, Buttesland-street, Hoxton—Imp. in locks.

Dated 25th October, 1862.

2874. Lieut. G. T. Key, R.N., Portsmouth—Imp. in fog and other signals.

Dated 27th October, 1862.

2893. G. Lindemann, Salford—Imp. in the manufacture of bricks, tiles, slabs, and other articles of earthenware or other plastic material, and in the machinery or apparatus connected therewith.

Dated 31st October, 1862.

2947. H. Williams and J. Maxton, Broadway, Nottingham—Imp. in machinery or apparatus employed in the manufacture of lace or trimmings made on bobbin net or twist lace machines.

Dated 3rd November, 1862.

2969. W. Clark, 53, Chancery-lane—Imp. in castors, and in the manufacture of the same. (A com.)

Dated 19th November, 1862.

3105. J. Chalmers, 8, Knight's-place, Vauxhall—Imp. in the use, combination, and application of iron and timber as armour for vessels of war and fortifications.

Dated 24th November, 1862.

3151. R. Hawthorn and W. Hawthorn, Newcastle-on-Tyne—Imp. in pump valves.

Dated 27th November, 1862.

3176. J. Halford, Great Barr, Staffordshire—Imp. in the preparation and treatment of small coal or slack, whereby a certain carbonaceous product is obtained and rendered available for use in the manufacture of iron and steel, in the process of casting and moulding metals, and in the manufacture of paint and such like articles.

Dated 28th November, 1862.

3197. A. Dudgeon, 19, Cullum street—Imp. in packing for various parts of steam and other engines and machinery.

Dated 1st December, 1862.

3218. J. Coppard, Hoxton—An appliance or appliances for horse shoes, to produce the effect of what is termed roughing.
3223. B. Oldfield, Coventry—Imp. in looms.

Dated 4th December, 1862.

3249. H. Swan, Bishopsgate-street-without—Imp. in stereoscopic apparatus.
3251. R. D. Kay, Accrington—Imp. in the manufacture or finishing of endless machine blankets, or endless lappings for printing purposes.
2253. F. D. Delf, Liverpool, and T. C. Gibson, Ramsey, Isle of Man—Improved means and apparatus, whereby petroleum and other oils and hydro-carbons can be safely carried and stored.
3255. H. Castlebon, 15, Passage des Petites Ecuries, Paris—An improved press to be used in the manufacture of tiles and bricks.
3257. J. Biggs, J. Johnson, T. Richardson, and T. Arnold, Leicester—Imp. in warp fabrics.
3259. R. Morusby, jun., Grantham, Lincolnshire—Imp. in apparatus for cutting and pulping turnips and other vegetables.

Dated 6th December, 1862.

3261. M. Tildesley, Willenhall, Staffordshire, and E. Sharpe, Swadlincote, Derbyshire—Imp. in the manufacture of earthenware knobs, and in fixing them in spindles used with certain kinds of knobs, in securing the metal mounts upon such knobs, and in apparatus to be employed in certain parts of this manufacture.

3262. L. Christoph, Paris, W. Hawksworth, Linlithgow, N.B., and G. P. Harding, Paris—Imp. in drilling, drawing, and rolling metals, and in the machinery or apparatus employed therein.

3263. E. B. Wilson, Parliament-street, Westminster—Imp. in railway wheels, and in the mode of manufacturing the same.

3265. J. M. Rigby, Manchester—Imp. in presses for pressing cotton or other fibrous materials.

3267. W. J. Smith, Brooklands-cottage, Sale, Cheshire—Imp. in the manufacture of collars, cuffs, and wristbands.

3269. C. Galletti and F. Stefano, Charles-street, Hoxton—Imp. in articles of furniture.

Dated 6th December, 1862.

3271. R. Thorp, Liverpool—Improved coating or covering for steam-boilers and other surfaces to prevent the radiation of heat.

3273. G. Wright, Friern Manor, Peckham Rye, Surrey—Certain imp. in the preparation and manufacture of food for cattle.

3275. J. Campbell, jun., Belfast—Imp. in means or apparatus for heckling or hackling flax and other fibres.

3277. E. Ullmer and W. Ullmer, Castle-street—Imp. in cylinder printing machines.

3281. Capt. W. Falliser, 18th Hussars, Dublin—Imp. in screw bolts

Dated 8th December, 1862.

3282. G. Lewry, Salford—Imp. in machinery for hackling flax, and preparing to be spun flax, hemp, tow, and such like materials.

3283. J. L. Budden, Fenchurch-street—Imp. in means or apparatus for obtaining and applying motive power for propelling or other purposes. (A com.)

3284. J. Sellars, Pendlebury, near Manchester—Imp. in the manufacture of pulp or half stuff used in the manufacture of paper, pasteboard, and similar articles.

3385. P. Todd, Wheelton, Lancashire—Certain imp. in "pickers" used in looms for weaving.

3287. G. A. Huddart, Brynkr, Carnarvon—Imp. in buttons.

3289. W. E. Newton, 66, Chancery-lane—Imp. in preserving animal substances. (A com.)

3293. J. A. Kiesling and C. J. Kiesling, Liverpool—Improved means of renewing worn out and partially worn out files and rasps.

3294. J. H. Johnson, 47, Lincoln's-inn-fields—Imp. in the construction of steam generators. (A com.)

Dated 9th December, 1862.

3295. T. Wingate, jun., Glasgow—Imp. in dredging machinery.

3297. M. P. Benton, 21, Percy-street, Bedford-square—Imp. in the manufacture of gunpowder. (A com.)

2299. R. A. Broome, 166, Fleet-street—Imp. in treating liquorice root to obtain liquid and solid extracts therefrom. (A com.)

3301. J. Howard, J. Bullough, and T. Clegg, Accrington—Imp. in machinery or apparatus for preparing cotton or other fibrous materials to be spun.

3303. P. Effertz, Manchester—Imp. in machinery or apparatus for making bricks, tiles, drain pipes, and other similar articles.

3305. E. B. Wilson, 5, Parliament-street, Westminster—Imp. in machinery or apparatus for rolling metals.

Dated 10th December, 1862.

3306. J. Lamb, Newcastle-under-Lyne—Imp. in the manufacture of tissue paper for transferring patterns and designs.

3307. W. Inglis, Montreal, Canada—Imp. in steam boilers.

3309. J. R. C. Taunton, Birmingham—Imp. in the manufacture and ornamentation of metallic bedsteads and other articles of like manufacture.

3311. M. Osborne, Birmingham—Imp. in the manufacture of cast-iron fenders.

3316. J. King, Heanor, Derbyshire—Imp. in apparatus used for signalling on railways.

3317. E. Toynbee, Lincoln—Imp. in extracting oils and fatty matters from shoddy or refuse wool, skins, or skin pieces, glue pieces, cotton waste, and other animal or vegetable matter, and in producing an artificial manure.

Dated 11th December, 1862.

3319. W. Tristram and H. Brereton, Halliwell, near Bolton-le-Moors—Imp. in machinery or apparatus for sizing yarns and threads.

3321. R. A. Ronald, Glenpatrick, Renfrew, N.B.—Imp. in printing textile and felted fabrics, and in the machinery or apparatus to be used therein.

3323. A. W. Burgess, 107, Strand—Imp. in the preparation of anachovics.

3325. W. Goulding, 17, Margaret street, Leicester—Imp. in ploughs.

Dated 12th December, 1862.

3327. G. Winlwarter, 32, King street, Cheapside—Imp. in the construction of portable houses, walls, or partitions of buildings, strong rooms, safes, refrigeratories, reservoirs, picas, and other structures, also applicable to the construction of casks and similar articles, boats, and ships.

3328. H. Sanderson, Sheffield—Imp. in the manufacture of table and other knives and forks.

3331. C. Hancock, West-street, Smithfield, and S. W. Silver, 4, Bishopsgate-street—Certain compounds and substances applicable for electric insulation and other purposes.

3333. G. G. Clark, 30, Craven-street, Strand—Imp. in fortification for the defence of ships, batteries, and forts.
 3334. S. Fox, Stockbridge Works, Deepcar, near Sheffield—Imp. in retorts and apparatus employed for the manufacture of gas, and also in purifying gas.

Dated 13th December, 1862.

3335. J. Brown, Sheffield—Imp. in the manufacture of armour plates.
 3336. J. W. Baker, Bury, Lancashire—Imp. in machinery or apparatus for spinning cotton and other fibrous materials.
 3337. J. Brown, 23, Sidney-street, Commercial-road East—Imp. in hydraulic machinery.
 3338. E. Thorold, Lee, Kent—Imp. in drill braces, which imps. are also applicable to spanners.
 3339. C. Corbet, 69, Upper Gardiner-street, Dublin—Imp. in rails for railways, and in the mode of forming the joints of the same.
 3340. R. Aitken, Cambridge-street, Pinlicko—Imp. in locomotive engines.
 3341. J. Petrie, jun., Rochdale—Imp. in machinery or apparatus for washing wool and other fibrous materials.
 3342. J. J. Thompson, Manchester—Imp. in machinery or apparatus for making pies and for cutting meat for the same.
 3343. W. E. Newton, 66, Chancery-lane—An improved mode of and apparatus for repairing the rails, points, switches, and other parts of the permanent way of railways. (A com.)
 3344. M. Henry, 84, Fleet-street—Imp. in fitting or applying propellers to ships and other vessels. (A com.)

Dated 15th December, 1862.

3346. W. Bestwick, Manchester—Imp. in braiding machines.
 3347. R. Stansfield and J. Dodgson, Todmorden, Lancashire—Imp. in looms for weaving.
 3348. G. Buchanan, Bucklersbury—Imp. in machinery used in crushing sugar canes.
 3349. W. Phelps, Nottingham—Imp. in locks.
 3351. E. B. Wilson, 5, Parliament-street, Westminster—Imp. in machinery or apparatus for rolling metals.
 3352. R. Kirk, Glasgow—Imp. in machinery or apparatus for checking or stopping the motion of railway carriages.

Dated 16th December, 1862.

3353. J. McInnes, Liverpool, and E. F. Prentiss, Birkenhead—Imp. in the distillation and treatment of petroleum and other like oils to obtain products therefrom, and in the apparatus to be used thereof, parts of which can be applied for distilling other liquids.
 3355. G. C. Warden, Islington—Imp. in ornamenting textile fabrics, leather, and other surfaces, in a cement employed therein, which is also applicable to the waterproofing of fabrics and materials, and in apparatus for applying and spreading such waterproofing cement. (A com.)
 3356. J. S. Hancock and S. Hancock, Sheffield—Imp. in "anti-garrotte" knives.
 3359. W. Smedley and A. Smedley, Nottingham—Imp. in machinery or apparatus for the manufacture of textile or looped fabrics on warp lace machines.
 3360. W. Hudson, H. Moore, C. Catlow, and S. Newburey, Burnley, Lancashire—Imp. in looms for weaving, and in arranging the warps therein.
 3361. J. L. W. Thudichum, Kensington—Imp. in collecting human excreta, and in the apparatus and means employed therein.
 3362. G. C. Wallich, M.D., 17, Camden hill-road, Kensington—Imp. in apparatus to be used in deep sea sounding for ascertaining the pressure and for raising specimens of the water.

Dated 17th December, 1862.

3365. R. Hattersley, Manchester—Imp. in apparatus for classing printers' types for composing machines.
 3366. W. Tongue, Bradford—Imp. in machinery and processes for preparing fibrous materials.
 3367. A. Alhini, Birmingham—Imp. in breech-loading fire-arms.
 3368. C. Defries, Houndsditch—Imp. in the manufacture or construction of lamps.
 3369. T. Knowles, Ashton-under-Lyne—Certain imp. in machinery or apparatus to be employed in preparing and spinning cotton and other fibrous substances.
 3370. J. R. Hampson, Manchester—Certain imp. in the method of securing the extremities of the hoops or bands employed in packing bales, and in apparatus connected therewith.
 3371. J. Thorne, Cardington-street, Hampstead-road—Imp. in apparatus for regulating the flow of gas to burners.
 3372. J. Ramsbottom and G. Hacking, Accrington—Imp. in machinery or apparatus for measuring and registering the flow of water and other fluids.

3373. J. W. Hawden, Kebroyd Mills, near Halifax—Imp. in machinery or apparatus for spinning, twisting, and doubling cotton and other fibrous materials.

3377. R. Wheeler, High Wycombe, Buckinghamshire—Imp. in ploughs.

3378. H. Burton, Princes-terrace, Prince of Wales-road, Kentish-town—Imp. in castors for furniture and other purposes.

3379. G. A. Huddart, Brynker, Carnarvon—Imp. in buttons.

3380. W. Clark, 53, Chancery-lane—Imp. in holders for lamps, candles, and other lights. (A com.)

3381. C. J. L. Lefler, Gefle, Sweden—Imp. in constructing armour for ships and fortifications.

Dated 18th December, 1862.

3384. J. Clayton, Wolverhampton—Imp. in reverberatory furnaces for heating large masses of iron and steel, and in economising the waste heat of the said furnaces.

3386. G. Russell, Glasgow—Imp. in cranes.

3388. J. Brierley and A. Brierley, Spa Mill, near Huddersfield—Imp. in carding engines.

3394. I. Holden, Bradford—Imp. in means or apparatus employed in preparing and combing wool and other fibres.

3396. J. L. W. Thudichum, Kensington—Imp. in the preservation of beer and other fermented liquids, and in the apparatus and means to be employed therein.

INVENTIONS WITH COMPLETE SPECIFICATIONS FILED.

3383. E. Lepainteur, Paris—Imp. in the fabrication of a salt for dyeing textile materials.—18th December, 1862.

3415. G. E. M. Gerard, Paris—Imp. in the fabrication of threads from vulcanised india rubber, and the apparatus connected therewith.—22nd December, 1862.

3422. F. Parker, Cambridge—Imp. in carriages.—23rd December, 1862.

PATENTS SEALED.

[From Gazette, December 30th, 1862.]

December 30th.

1915. E. F. Prentiss.
 1917. R. A. Brooman.
 1918. C. Lungley.
 1919. G. H. Birkbeck.
 1920. J. Greenhalgh and J. Greenhalgh.
 1926. J. James.
 1929. T. L. Atkinson.
 1930. G. H. Hulskamp.
 1931. J. Murray.
 1933. J. Crisp and J. W. Elliott.
 1935. G. Bedson.
 1936. J. M. Hetherington and T. Jackson.
 1942. T. O. Dixon.

1945. W. J. Cunningham.
 1946. A. Drevelle.
 1948. J. Howard and J. Bullough.
 1950. R. A. Brooman.
 1952. C. G. Hill and W. Jackson.
 1953. A. Warner.
 1854. P. B. O'Neill.
 1960. W. Spence.
 1985. H. Kellogg.
 2002. C. E. Green and J. Green.
 2147. A. Boyle and T. Warwick.
 2209. M. A. F. Mennons.
 2316. W. E. Newton.
 2536. E. Astel.
 2612. M. A. F. Mennons.
 2876. J. A. Nicholson.

PATENTS ON WHICH THE STAMP DUTY OF £50 HAS BEEN PAID.

[From Gazette, December 30th, 1862.]

December 22nd.

2920. G. F. Stidolph.
 90. A. C. Twentyman.

December 23rd.

2932. J. Giles.
 2936. D. Hulett and G. Boccus.
 2953. X. G. de Nabat and A. C. de Nabat.

December 24th.

2992. H. Cochrane.

December 26th.

2990. J. Whitworth.

December 27th.

2958. A. McDougall.
 2967. S. King.
 2969. J. S. Crosland.
 96. J. Goddard.

PATENTS ON WHICH THE STAMP DUTY OF £100 HAS BEEN PAID.

[From Gazette, December 30th, 1862.]

December 24th.

2925. C. May and E. A. Cowper.
 2950. T. Holmes.

December 26th.

2938. G. Chisholm.

LIST OF DESIGNS FOR ARTICLES OF UTILITY REGISTERED.

No.	Date of Registration.	Title.	Name.	Address.
4530	Dec. 18	Anti-Garrotting Cravat	Walter Thornhill	144, New Bond-street.
4531	" 30	Rhomboidal Body for Metal Printing Types of an italic or other sloping character	Stephenson, Blake, and Co....	Sheffield
4532	" 31	An Expanding Travelling Bag	John Harrison	Birmingham.